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ABSTRACT

The infusion of workforce education into K-12 education may be detrimental to American students. American schools should not emphasize practical skills at the expense of academic skills. Academic standards should focus on academic content, not workplace competencies. The major impetus for transforming academic standards came in the 1990s when the Secretary's Commission on Achieving Necessary Skills (SCANS) was convened. SCANS published a report identifying skills required in 21st century high-performance worksites. The report recommended integrating workplace competencies into core academic subjects. In 1994, Congress passed the School-to-Work Opportunities Act (STWOA) to address American education's failure to graduate people with marketable knowledge and skills. The STWOA embodied the central tenets of the school-to-work (STW) philosophy. To varying degrees, all 50 states have implemented STW. This report examines the problem with SCANS, noting the detrimental impact on students' basic academic education of integrating academic and vocational education. It discusses problems with STW and contextual learning, then examines work-based competencies in practice. After describing the Workforce Investment Act, it discusses a better approach to standards, concluding that retreating from teaching proficiency in academic areas deprives America's youth of true critical thinking skills and reasoned judgement. (SM)

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THE NEW DEFINITION OF STANDARDS IN AMERICAN EDUCATION
THE HERITAGE FOUNDATION BACKGROUNDER
No. 1427

Virginia Miller
April 4, 2001

The Heritage Foundation
Washington, D.C.

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Backgrounder
Executive Summary

No. 1427 April 4, 2001

THE NEW DEFINITION OF STANDARDS IN AMERICAN EDUCATION

VIRGINIA MILLER

America is embroiled in a debate over how best to educate its students. Throughout the past three decades, students have been exposed to a sea of educational fads, from new math and whole language to outcome-based education and cooperative learning. Each new theory has been administered as a healing elixir for the failure of public schools to help American students rise to the same heights of achievement as many foreign students on international measures. As post-secondary schools increasingly assume the responsibilities of elementary and secondary education, and as employers and parents complain about the failure of schools to teach basic skills, the standards movement has become the latest attempt to remedy lagging performance.

Eager to respond to growing public pressure to improve the quality of education, policymakers at all levels of government are pressing for higher standards in education. Major corporations are calling for higher standards and partnering with educators to promote their strategies. Governors are instituting state standards and assessments, and many states are tying them to grade promotion and graduation. Federal funding of education programs through such legislation as the Improving America's Schools Act and Goals 2000 impose state content and performance standards tied to state assessments as a condition of funding eligibility. Indeed, the mantra of the day in education reform is high academic standards with accountability.

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Underlying this effort is the assumption that linking high-stakes assessments to standards will motivate educators to higher levels of teaching and students to higher levels of academic achievement. The success of both the new standards and the assessment of student progress in meeting those standards will hinge on the content and quality of the standards themselves; so far, however, policymakers have focused on how to implement standards, paying little attention to their actual content.

Quite unnoticed, a new definition of education standards has emerged—one that places greater relevance on the world of work. All learning is to

take place within the context of a work situation or real-world environment with emphasis on workplace competencies. Proponents believe this will foster in students a greater desire to learn because the subject matter has greater relevance to their goals. But the result has been a narrower education that focuses on practical skills to the detriment of a broader academic education. The danger is that the new standards may elevate workplace competencies above essential academic knowledge.

Not all education is vocational education. Schools should not be required or encouraged by federal funding to narrow their focus to emphasize workplace skills. The failure of vocational education in America to provide a quality education for non-college-bound students is no reason to infuse workforce education throughout the elementary and secondary education system. A better solution would be to rebuild a vibrant voluntary vocational system to provide a proper transition to work and a career for non-college-bound youth.

To improve education, Washington should assure that efforts to promote standards focus on academic standards. More important, state legislators and education officials at the state and local level should:

- **Eliminate** school-to-work programs and activities from comprehensive elementary and secondary education;
- **Develop and incorporate** education standards that are academic, rigorous, specific, measurable, and non-prescriptive of methodology or ideology, and that focus on academic content rather than workplace competencies;
- **Phase out contextual learning** and replace it with proven teaching methods;
- **Resist** the integration of workplace competencies and academics at all grade levels;
- **Restore** academic focus and rigor to all subjects for all students;
- **Restrict** the participation of students in workforce investment programs;
- **Protect** kindergarten through 12th grade curricula and standards from inordinate business influence; and
- **Rebuild** a vibrant and voluntary vocational system for transition to work and careers for non-college-bound students.

Research shows that education oriented to specific workplace skills and job training produces graduates who are less versatile and unable to change occupations without substantial retraining. By contrast, graduates of a rigorous liberal arts education can readily learn new skills and adjust to new jobs. There is lifelong value in gaining knowledge of history, literature, science, mathematics, and the arts far beyond the world of work. The most important purpose of schools is to educate Americans to be vigilant guardians of their freedom and to be able to take advantage of the social and economic opportunities that a free society affords.

America's schools should not be required by their utilization of government funding to narrow their focus to practical skills at the expense of academic skills. There is more to education than securing gainful employment. Knowledge of history, science, mathematics, and literature is valuable regardless of whether it leads directly to a job.

For too long, primary and secondary public education has retreated from teaching these core academic competencies. The success of the current effort in Washington to improve the quality of education and graduate adults who are better prepared for the many opportunities of the 21st century by imposing higher standards and assessments will depend on the content and quality of the standards themselves.

—Virginia Miller is an education policy consultant based in Pittsburgh, Pennsylvania.

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Eager to improve the quality of education, policymakers at the federal, state, and local levels are pressing for higher standards in education. Major corporations are calling for higher standards in schools as well and are partnering with educators to promote their strategies.[2] Governors are instituting state standards and assessments, and many states are tying them to grade promotion and graduation.[3] Federal funding of elementary and secondary education programs through such legislation as the Improving America's Schools Act (P.L. 103–382) and Goals 2000 (P.L. 103–227) also imposes state content and performance standards tied to state assessments as a condition of funding eligibility.

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1. National Center for Education Statistics, "Third International Mathematics and Science Study," at http://nces.ed.gov/timss/ (February 22, 2001).
2. See National Alliance of Business at http://www.nab.com.
3. These states include Alaska, Arkansas, Arizona, California, Delaware, Florida, Georgia, Hawaii, Illinois, Indiana, Louisiana, Maryland, Massachusetts, Minnesota, Mississippi, Nevada, New Jersey, New Mexico, New York, North Carolina, Ohio, Oregon, South Carolina, Tennessee, Texas, Utah, Virginia, Washington, and Wisconsin.

The mantra of the day in education reform is high academic standards with accountability.

Underlying this effort is the assumption that linking high-stakes assessments to standards will motivate educators to higher levels of teaching and students to higher achievement. The success of both the new standards and the assessment of students' progress in meeting those standards will hinge on the content and quality of the standards themselves; so far, however, policymakers have focused on the process of implementing standards, paying little attention to their actual content.

Quite unnoticed, a new definition of education standards has emerged—one that places greater relevance on the world of work. All learning is to take place within the context of a work situation or real-world environment with emphasis on workplace competencies. It is argued that this will provide relevance for students that will foster in them a desire to achieve greater levels of learning. But the result has been a narrower education that focuses on practical skills to the detriment of a broader academic education. The danger of the new education standards is that they may elevate workplace competencies above essential academic knowledge.

Not all education is vocational education. Schools should not be required or encouraged by federal funding to narrow their focus to emphasize workplace skills. The failure of vocational education in America to provide a quality education for non-college-bound students into the world of work is no reason to infuse and impose workforce education throughout the elementary and secondary education system. A better solution than transforming all of education would be to rebuild a vibrant voluntary vocational system to provide proper transition to work and careers for non-college-bound youth. Policymakers also should develop education standards that are academic, rigorous, specific, measurable, and non-prescriptive of methodology or ideology. Standards should focus on academic content and be free of workplace skills or competencies.

FROM SCANS TO SCHOOL-TO-WORK TO NEW STANDARDS

The major impetus for transforming academic standards came in the 1990s when the U.S. Secretary of Labor, Lynn Martin, convened the Secretary's Commission on Achieving Necessary Skills (SCANS). In 1992, the commission published a report entitled *Learning a Living: A Blueprint for High Performance*.[4] This report identified the skills that the commission believed a 21st century high-performance workplace would require:

- SCANS Foundational Skills: basic reading, writing, and math skills; thinking skills and problem solving; and personal qualities such as individual responsibility, self-esteem, and integrity.[5]
- SCANS Workplace Competencies: knowing how to allocate time, money, and materials; interpersonal skills such as working on teams, teaching others, and negotiating; using, evaluating, and communicating information; understanding social, organizational, and technological systems; and effectively using technology.[6]

The SCANS report recommended integrating these competencies into core academic subjects taught in kindergarten through 12th grade and beyond. Calls to integrate the SCANS skills and competencies into state standards and assessments of core academic subjects as well increased nationwide.

In 1994, Congress passed the School-to-Work Opportunities Act (STWOA, P.L. 103–239) to address the failure of America's primary, secondary, and vocational education systems to graduate young adults with marketable knowledge and skills. Embodied in the STWOA are the central tenets of the school-to-work (STW) philosophy—

4. U.S. Department of Labor, *Learning a Living: A Blueprint for High Performance*, Secretary's Commission on Achieving Necessary Skills, April 1992, at *http://www.ttrc.doleta.gov/SCANS/lal/LAL.HTM* (February 22, 2001).
5. *Ibid.*, p. xiv.
6. *Ibid.*

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workplace relevance, integration of academic and vocational education, and workplace competencies. STW is not vocational education, nor does it build upon vocational education. It also is not a distinct program. Rather, it is an umbrella philosophy for many activities that are intended to systematically restructure all education for all students.

Proponents claim that for students to attain higher levels of academic achievement, education must be relevant to the real world: that is, to the world of work. They assert that integrating academic and vocational education in every subject for all grades will produce this relevancy. Thus, STW is much more than career awareness and guidance counseling; it is career integration in every discipline, across all subjects, at all grade levels, in all schools.

To varying degrees, STW has been implemented in all 50 states, and its defining features have been absorbed in the comprehensive education reform programs currently underway at the state level. Included in the reform efforts are revisions in state academic standards, Title I grants to local educational agencies, and Goals 2000 state and local education systemic improvement grants. All of these encourage teaching and learning in the context of real-life applications and careers. Career development is being infused throughout the curriculum as academic and technical curricula are integrated across all subject areas and grade levels. These measures also provide for the sustainability of STW despite the impending sunsetting of the STWOA in 2001 and the growing sentiment in Congress to halt the program.

Today, there is evidence across the nation that STW has integrated workplace competencies, many based on the SCANS report, in classrooms, in core academic subjects, and in state standards. State after state is implementing standards infused with the SCANS foundational skills and workplace competencies. As stand-alone career or technology standards are embedded in language arts, history, science, or mathematics, the focus of workforce development is replacing academic essentials. For example:

Florida's 1994–95 System of School Improvement and Accountability, known as Blueprint 2000, states: "In this information age, the exit-level [high school] standards required for entry into postsecondary education are the same as the entry-level standards required for entry into the workforce.... The skills, knowledge and values comprising these standards are those identified by the SCANS as applied through Florida's Core of Essential Concepts."[7]

In **Texas**, the state's Essential Knowledge and Skills curriculum includes "the use of knowledge and skills in everyday life, in work, and, in the future, real-world-skills in academic subjects (e.g., English Language Arts and reading, Mathematics, Science and Social Studies will teach students how to set personal and career goals)."[8]

Michigan's Career and Employability Skills include Applied Skills that "will be accomplished in the English language arts, mathematics, science, and social studies benchmarks, and may be accomplished through cross disciplinary teaching strategies with other subject areas."[9]

New Hampshire's Career Development Framework states: "It is also understood that knowledge, skills, and attitudes essential for career development are presented across a school's entire curriculum, integrating the goals of New Hampshire's 6 curriculum frameworks. Therefore curriculum planners should also consult the following: K–12 English Language Arts Curriculum Framework; K–12 Integrated Arts Curriculum Framework; K–12 Mathematics

7. Florida Commission on Education Reform and Accountability, *Blueprint 2000: A System of School Improvement and Accountability for 1994–95 School Improvement Plans*, 1993, p. 19.
8. Texas State School-to-Work Application for an Implementation Grant, August 30, 1996, p. 4.
9. Michigan Department of Education, "Career and Employability Skills: Content Standards and Working Draft Benchmarks, Applied Skills," at *http://cdp.mde.state.mi.us/MCF/ContentStandards/CareerEmployability/1.html* (February 29, 2000).

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Curriculum Framework; K–12 Science Curriculum Framework; K–12 Social Studies Curriculum Framework."[10]

New Jersey identifies Cross-Content Workplace Readiness Standards as part of their Core Curriculum Content Standards that "are not broken down into grade level clusters because, in addition to crossing all content areas, they also cross all grade levels. Teachers should integrate these concepts into all programs in content-specific and grade-appropriate ways."[11]

Alaska proudly relates that "Alaska Content Standards directly relate to the Secretary's Commission on Achieving Necessary Skills (SCANS).... All Alaska Content Standards help prepare students to make a successful transition to work."[12] A table available on the Alaska's Department of Education Web page lists which content standards most directly align with the SCANS report.

The integration of academic and vocational education is widespread in the states and is having a detrimental impact on the basic academic education of many elementary, middle school, and high school students. It does not matter what descriptors are attached to standards—"high," "rigorous," or "academic." What is important is the objective level each standard sets for measuring academic quality. In state after state, whether in specific career education standards or embedded in English language arts standards and cross-content standards, basic academic knowledge is being diminished to make room for workplace competencies.

THE PROBLEM WITH SCANS

Serious concerns have been raised over the adoption of the SCANS recommendations because the generalized workplace competencies of the SCANS have never been validated. A National Job Analysis Study begun by ACT, Inc., in 1995 to validate the SCANS skills was never completed. After the Office of Management and Budget (OMB) refused to continue funding in 1996, the project died. The preliminary results based on Phase I of the study were published, but with no definitive conclusions.[13] The study could not produce sufficient information on which to generalize the SCANS workplace competencies to high-performance jobs, and further research was necessary to validate the SCANS recommendations.[14] Nevertheless, states are implementing their own standards based on the SCANS competencies, which may have no correlation to job performance.

THE PROBLEM WITH SCHOOL-TO-WORK

According to a 1998 report by the National Association of Manufacturers, "40 percent of all 17-year-olds do not have the necessary math skills—and more than 60 percent do not have the necessary reading skills—to work in a $33,000 per annum production job at a modern auto plant."[15] More recently, the American Management Association reported that 38.3 percent of job applicants tested in 1999 lacked sufficient skills for the positions they sought.[16]

The fact that many job applicants lack the literacy and math skills necessary to perform anything but rudimentary assignments on the job is not the

10. New Hampshire Department of Education, "Career Development Framework," at *http://www.state.nh.us/doe/Guidance%20Counseling/CareerFrame.htm* (February 22, 2000).

11. New Jersey Department of Education, "New Jersey Department of Education New Jersey Core Curriculum Standards: Cross-Content Workplace Readiness Standards," at *http://www.state.nj.us/njded/cccs/05ccwready.html* (February 29, 2000).

12. Alaska State Board of Education, "Alaska Employability Standards, September 1998," at *http://www.eed.state.ak.us/tls/stw/employability%5Fstandards.html* (March 6, 2000).

13. ACT, Inc. (formerly the American College Testing Program), "The National Job Analysis Study: A Project to Identify Cross-Occupational Skills Related to High-Performance Workplaces," November 1995.

14. *Ibid.*

15. National Association of Manufacturers, "Education & Training for America's Future," 1998, p. 17.

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result of the schools' failure to teach workplace skills; rather, it is the result of their failure to teach essential academic knowledge and literacy skills. There is a widespread assumption that workplace skills and their corresponding standards are the same as basic academic skills. They are not.

- **Basic academic skills** are reading, writing, and mathematics, and standards for these subjects can be defined and measured objectively.
- **Workplace skills**, on the other hand, range from skills and competencies common to broad occupational groups to those essential for specific jobs. Some can be defined and measured objectively, but many are affective in nature and subjective in evaluation. The skills or competencies that fall into the affective domain are ethics, interpersonal skills, integrity, and respect for diversity, among others.

A number of studies have raised serious questions about the effectiveness of STW. While some studies have found higher student motivation and engagement, as well as slightly lower dropout rates,[17] not one conducted to date has found that STW or any of its component learning theories has increased the academic achievement of students as measured by standardized test scores. Children may be more motivated to attend school, but this still does not answer the question, what are they learning and how well?

Much of the research that claims STW is a success does not consider academic achievement to be the highest priority. Rather, these studies consider student satisfaction, enhanced self-esteem, and other nonacademic outcomes as equal or superior to academic achievement. If any positive outcome, academic or nonacademic, is produced, STW is considered successful.

However, Mathematica Policy Research's National Evaluation of School-to-Work Implementation—the largest study of STW conducted to date—found that efforts by states to raise academic standards are occurring independently of STW.[18] According to the report, "it has been difficult in evaluation site visits to identify clear plans for promoting [academic] skills in workplace activities that STW partnerships have arranged."[19]

Moreover, many schools experience a tension between the priority that states and districts place on raising academic standards and the interests of STW implementation leaders. According to Mathematica Policy Research,

> In some cases, [STW] activities can occur only in ways that intrude on academic class time. Even when they are part of special courses, they take up time that students could otherwise devote to elective academic courses. Despite the theory that STW-type activities can contribute to academic attainment, the absence of rigorous evidence applicable to their own schools often leaves frontline staff feeling caught between the pressures of competing priorities. Moreover, when academic teachers embrace [STW] ideas about making learning more applied and contextual, their early efforts sometimes appear to retreat from high standards.[20]

16. American Management Association, "Workplace Testing, Basic Skills, Job Skills, Psychological Measurement, Summary of Key Findings," 2000, p. 1.
17. Katherine L. Hughes, Thomas R. Bailey, and Melinda J. Mechur, "School-to-Work: Making a Difference in Education," Institute on Education and the Economy, Teachers College, Columbia University, February 2001. This review of 132 STW studies also concluded that the program supports youth development and career preparation; that employers are enthusiastic about STW; that teachers see value in STW; and that STW supports academic achievement by improving attendance, grades, and graduation rates.
18. Mathematica Policy Research, *Expanding Options for Students: Report to Congress on the National Evaluation of School-to-Work Implementation*, 1999, p. 141.
19. *Ibid.*
20. *Ibid.*, pp. 142–143.

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In addition, STW activities can take time away from academic studies. The report states that teachers

> are often concerned that incorporating more practical and hands-on learning will take away from the more traditionally defined academic skills they consider critical to their students' success in standardized testing, college admissions, and more advanced study.[21]

The Mathematica Policy Research study concludes "that students often face a trade-off between taking the time to pursue electives with career content and using their elective options to take more advanced traditional academic classes."[22]

Other studies support the Mathematica findings:

- A study of 100 students participating in the Cornell Youth Apprenticeship Demonstration Project found that the youths did gain job-related skills and knowledge, but there were no effects on academic achievement.[23]
- A random-assignment study found that participation in a career academy had no effect, either positive or negative, on standardized test scores.[24]
- A report produced by the Institute on Education and the Economy concluded that "research regarding STW students' achievement on standardized tests is inconclusive. The few existing studies indicate that there is little, if any, effect on test scores."[25]

These studies reaffirm the conclusion reached in a 1996 U.S. Department of Education study that, while

> [m]ost [STW] programs are reported to be effectively teaching occupational skills at a sufficient level…less commonly, gains in academic skills are reported.[26]

The business community and institutions of higher education continually point to the lack of academic skills in applicants, not to a deficiency in their workplace skills. "We are not interested in public schools teaching work-related skills," stated IBM CEO Louis Gerstner at the 1996 National Education Summit. "We can teach them what they need to run a machine or develop a marketing plan. What is killing us is having to teach them to read, compute, communicate, and to think."[27] As a 1998 Public Agenda poll of employers and professors conducted for *Education Week*[28] revealed, the greatest dissatisfaction with recent high school graduates' skill levels lies in basic academic knowledge.

If businesses and parents are more concerned with literacy skills and academic achievement, one might ask why there is such a strong movement to integrate workplace skills into school curricula. The answer lies in the dominant educational philosophy of STW. As a utilitarian view of education, STW prematurely places the value of work above

21. *Ibid.*, p. 73.
22. *Ibid.*, p. 144.
23. M. A. Hamilton and S. F. Hamilton, *Learning Well at Work: Choices for Quality* (New York: Simon and Schuster, 1997).
24. J. J. Kemple and J. C. Snipes, "Career Academies: Impacts on Students' Engagement and Performance in High School," Manpower Demonstration Research Corporation, 2000. Random-assignment studies provide the most accurate estimate of the effects of STW on student achievement.
25. Hughes *et al.*, "School-to-Work: Making a Difference in Education."
26. U.S. Department of Education, "Study of School-to-Work Initiatives, Office of Educational Research and Improvement," 1996, p. 40.
27. National Education Summit, "View from the Summit," 1996, available at *www.summit96.ibm.com/news1.html* (March 27, 1997).
28. "The Urban Challenge," *Education Week*, January 8, 1998, p. 75.

the value of academic knowledge and skills, to the detriment of both the student and business.

THE PROBLEM WITH CONTEXTUAL LEARNING

The school-to-work strategy fails to raise academic achievement as measured by standardized tests because its underlying theories of learning are flawed. The roots of this strategy lie in constructivist education theory (the belief that students will better remember information they create for themselves) and contextual or applied learning (learning that must take place within the context of work). These theories imply that education is not concerned with the acquisition of an accepted body of knowledge transmitted by a teacher, but rather with the process of helping students discover and create their own understandings from personal experience.[29]

The emphasis on process over content de-emphasizes basic knowledge and skills acquisition, and limits later conceptual understanding and academic achievement. STW requires contextual and applied learning in order to connect the work students do in school to the demands of the 21st century workplace, and it is having dramatic effects on classroom practices and state standards because it is taught within the context of academic subjects.[30]

The belief that students will learn by scurrying about seeking information to attain ill-defined goals lies at the heart of contextual learning and STW. By simply engaging in work-related processes, students are supposed to develop critical thinking. However, there is no evidence that complex procedures can be learned before a student has mastered the simpler components of those procedures.[31] Dr. Alan Cromer of Cornell University notes that, "Without knowledgeable guidance from their teacher, students are truly like mice in a maze. Each will arrive at his own version of the goal with his own set of errors and misconceptions."[32]

John Anderson, Lynn Reder, and Herbert Simon of Carnegie Mellon University are among the foremost cognitive psychologists in the United States. They conclude that both constructivist education theory and contextual learning claims are unproven and, in several respects, at odds with well-known scientific findings. In fact, such methods may be detrimental to learning as knowledge becomes situation-bound and context-specific, leaving the student unable to generalize and transfer his knowledge to new and different situations.[33]

Contextual learning is likely to be highly variable and uncertain. It does not inculcate knowledge and skill effectively, securely, or universally. What students remember remains uncontrolled, contingent, and largely irrelevant to definite and responsible learning goals.[34] Lauren Resnick of the University of Pittsburgh, a leading theorist on constructivist and contextual learning, admits that, "Despite broad interest in contextualized learning programs, there is little systematic evidence about their effectiveness, especially with respect to meeting academic standards in math, science, and English/communications."[35]

Many parents assume that the education standards currently being adopted by the states are academic, of high quality, and grounded in core academic subjects. This is not the case. The curric-

29. J. E. Stone and A. Clements, "Research and Innovation: Let the Buyer Beware," in Robert R. Spillane and Paul Regnier, eds., *The Superintendent of the Future* (Gaithersburg, Md.: Aspen Publishers, 1998), pp. 59–97.

30. *Performance Standards, Volume 3: High School: English Language Arts, Mathematics, Science, Applied Learning* (Washington, D.C.: New Standards, 1997), pp. 3, 106.

31. Alan Cromer, *Connected Knowledge: Science, Philosophy and Education* (New York: Oxford University Press, 1997), p. 145.

32. *Ibid.*

33. J. R. Anderson, L. M. Reder, and H. A. Simon, "Applications and Misapplications of Cognitive Psychology to Mathematics Education," at *http://act.psy.cmu.edu/ACT/papers/misapplied-abs-ja.html*.

34. E. D. Hirsch, Jr., *The Schools We Need and Why We Don't Have Them* (New York: Doubleday, 1996), p. 218.

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ulum integration of academic and vocational skills, known as contextual or applied learning, has become a cornerstone of education reform. As a result, state education standards increasingly define questionable workplace competencies, and local school curricula are infused with workplace skills and assessments to meet those standards.

By trying to make education more useful to employers, states are redefining academic standards. All education becomes vocational education when academic achievement is jettisoned and neo–vocational education is redefined as education for both college- and career-bound students.

WORK-BASED COMPETENCIES IN PRACTICE

Across the country, workplace competencies and real-world situations are found within the core curriculum in the context of tasks in English, mathematics, and science. Actual curriculum examples include the following:

- Chemistry students are asked to determine the most effective, economical, and environmentally safe grass fertilizer for a school district. The students were to produce an analytical report with detailed procedures and conclusions and then make a recommendation to the school district's grounds and maintenance department.[36]
- Middle school math students visit local car dealerships to determine the average cost of cars with similar features. Groups of four students then present what they think is the best car for a given amount of money allowed and justify their choice to the class.[37]
- Taking time away from academics, high school seniors are provided the opportunity to experience a manufacturing work environment while learning the fundamentals of basketmaking.[38]

States and individual school districts are also beginning to mandate that students take employability skills and workplace competency assessments as well. The most notable assessment test is WorkKeys, produced by ACT, Inc. Based on the SCANS, it assesses such workplace skills as applied mathematics, applied technology, listening, locating information, observation, reading for information, teamwork, and writing. Tasks range from taking phone messages to computing sale prices, reading instructions for filling a candy machine, troubleshooting a hydraulic lift, or repairing a refrigerator.

WorkKeys is one of the fastest growing workplace skills assessments in use today. For example:

- It is a graduation requirement for all high school students in Wichita, Kansas.[39]
- Beginning with the class of 2002, Topeka, Kansas, and Jefferson County, Kentucky, will require seniors to achieve a minimum score on the WorkKeys exam to graduate.[40]
- Illinois' new Prairie State Achievement Exam will include WorkKeys exams.[41]
- In Upstate New York, a Syracuse University–Community Workforce Development Partner-

35. L. Resnick and M. Jury, "Contextualized Learning of Academic Subject Matter: State of the Art," Learning and Work Research Projects, Learning and Research Development Center, at *http://www.lrdc.pitt.edu/research/old/law98.htm* (March 6, 2000).
36. *Performance Standards, Volume 3*, p. 118.
37. Catherine Thielmann, Marc Seeger, and Dave Neidhart, "Math Relevance: Cars: Middle School/School-Based, Connecting Activity," *School-to-Work Best Practices Guide*, New York State Department of Education, at *http://www.albany.edu/twoyear/stwbestprac/middle/mssch/ms20.html* (March 29, 2001).
38. Longaberger Company, "Mentor Training Program Brochure," Newark, Ohio, 1996.
39. ACT, Inc., "A Common Language," *WorkKeys USA*, Vol. 6, No. 3 (Fall 1999), p. 9.
40. ACT, Inc., "Pioneering Districts Use WorkKeys as a High School Exit Exam," *ACTIVITY*, Autumn 2000, p. 6.
41. ACT news release, "McGee Unveils Groundbreaking Test for Juniors: Prairie State Exam to Include ACT and WorkKeys," June 10, 2000.

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ship has inspired over 30 companies to use WorkKeys with at least seven high schools in the region.[42]

- In the San Francisco Bay Area, several large employers adopted WorkKeys to identify anticipated skill needs for specific jobs, while high schools throughout the region began testing students in several WorkKeys skill areas. The result: "a certification system recognized by business and education as a measure of student preparation for the workplace of the 21st century," according to Bay Area Industry Education Council vice president Gerald Bartlett.[43]

Education always has had economic and work-based implications, but never before have states so tied economic development and the needs of business so directly to education standards. To the extent that work-based standards crowd out rigorous academic standards, business will soon discover that high school graduates who walk through their doors tomorrow are no better prepared in reading, writing, and math than they are today.

They may also discover that the "trained" graduates arriving on their industries' doorsteps may require retraining at an even higher rate. Youth who learn contextually do not perform well when basic knowledge and theoretical thought are required. The more specific or situation-bound that knowledge becomes, the less a student is able to generalize and transfer knowledge to new and different situations. Those who experience a well-rounded liberal arts education, by comparison, usually adapt easily to contextual learning situations.

THE WORKFORCE INVESTMENT ACT AND EDUCATION STANDARDS

The primary purpose of the Workforce Investment Act (WIA, P.L. 105–220) is to reform and restructure 60 federal job training programs into state block grants and provide a framework for a national workforce preparation and employment system to meet the needs of business and workers. The WIA, combined with STW, melds education, job training, and human resource planning much more closely than ever before. As STW makes education more utilitarian and workplace-focused, a mechanism is needed to align job trends with school programs and curriculum. The WIA serves that function.

Under the WIA, state and local workforce investment boards—the majority of whose members are businessmen and women—are required to identify current and projected employment opportunities and the skills necessary to obtain those jobs. States are also required to develop a labor market information system (LMIS) that estimates the industrial distribution of jobs and skill trends by occupation and industry. The local workforce investment boards use the LMIS information to develop programs to provide "tutoring, study skills training, and instruction, leading to completion of secondary school, including drop-out prevention strategies."[44] The vocational–technical competencies necessary for targeted industries and jobs are then integrated into school curricula through STW programs.

Although proponents of STW view WIA employment projections as a positive education reform that will better prepare students for local job opportunities, this practice is fraught with danger. The problem is that the LMIS projection models are based on past trends. Schools, together with business, are required to predict the future job market and then train children for those jobs. They may be able to forecast the job market one year from now, but no one can accurately predict what jobs will be available five, 10, or 20 years in the future. The immediate needs of business may be served in such a system, but in the long run, it is a disservice to students and future employers. If STW were around in 1900, for example, educators, bureaucrats, and employers might have trained schoolchildren to be domestic household

42. ACT Inc., "A Common Language," pp. 9–10.

43. *Ibid.*, p. 9.

44. P.L. 105–220, Section 129(c)(2)(A).

help, blacksmiths, barrel-makers, or other high-demand occupations that became nearly obsolete just 20 years later. This is hardly wise education policy.

In addition, business representatives on the boards may be tempted to manipulate job needs with adverse repercussions on wages in particular markets, and the future market needs of businesses that are not represented on a board or that are nonexistent in an area at that time may be ignored. WIA performance measures may induce schools to guide students into careers that meet the requirements of businesses instead of allowing them to choose their own career path.

Finally, job placement and retention are used as performance measures for success in this new education system.[45] If job placement and retention are the primary measures of success, the pressure to train students in preferred industries and occupations that are currently available in the school's proximity becomes enormous.

A BETTER APPROACH TO STANDARDS

In the guise of consolidating workforce training programs and raising academic standards, current reform is melding education and workforce training into a single system. The failure of America's schools to educate its youth is not, however, a workforce development problem; it is an elementary and secondary education problem: the lack of sound, rigorous, academic curricula coupled with the education establishment's reluctance to demand mastery of the basic skills.

The difficulties students have in making the transition from high school to work or college would disappear if education reforms were focused on strengthening core curricula, using proven teaching methods, setting high expectations for students and parents, and enabling local educators to improve classroom discipline. If primary and secondary schools concentrated on improving these key areas instead of on implementing STW strategies, students would realize greater academic achievement and be better prepared for work or higher education.

To strengthen academic achievement, Washington should ensure that efforts to promote standards focus on academic standards. More important, state legislators and education officials at the state and local level should:

- **Eliminate** STW programs and activities from comprehensive elementary and secondary education;
- **Develop and incorporate** education standards that are academic, rigorous, specific, measurable, and non-prescriptive of methodology or ideology, and that focus on academic content rather than workplace skills or competencies;
- **Phase out contextual learning** and replace it with proven teaching methods;
- **Resist** the integration of workplace competencies and academics at all grade levels;
- **Restore** academic focus and rigor to all subjects for all students;
- **Restrict** the participation of students in workforce investment programs;
- **Protect** kindergarten through 12th grade curricula and standards from inordinate business influence; and
- **Rebuild** a vibrant and voluntary vocational system for transition to work and careers for non-college-bound students.

Research shows that education oriented to specific workplace skills and job training produces graduates who are less versatile and unable to change occupations without substantial retraining. By contrast, graduates of a rigorous liberal arts education can readily learn new skills and adjust to new jobs. There is lifelong value in gaining knowledge of history, literature, science, mathematics, and the arts far beyond the world of work. The most important purpose of schools is to educate Americans to be vigilant guardians of their freedom and to be able independently to take advantage of the social and economic opportunities that a free society affords.

45. P.L. 105–220, Section 136(b)(2).

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CONCLUSION

Not all education is vocational education. America's schools should not be required by their utilization of government funding to narrow their focus to emphasize practical skills at the expense of academic skills. There is more to education than securing gainful employment. Knowledge of history, science, mathematics, and literature is valuable regardless of whether it leads directly to a job.

The current philosophy of education that permeates primary and secondary schools is shorn of the disciplined knowledge that is fundamental for an educated citizenry. The retreat from teaching proficiency in academic math and science deprives America's youth of true critical thinking skills. The deconstruction of the humanities renders youth incapable of reasoned judgment.

For too long, primary and secondary public education has retreated from teaching these core academic competencies. The success of the current effort in Washington to improve the quality of education by imposing higher standards and assessments will hinge not on the assessments, but on the content and quality of the standards themselves. If these standards are academic, rigorous, specific, measurable, and non-prescriptive of methodology or ideology, America's schools will graduate adults who are better prepared for the many opportunities of the 21st century.

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